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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,617	03/11/2005	Mark W. Hildebrant	JWI C-29 (US)	7208
23474	7590	08/24/2006	EXAMINER	
FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			KURTZ, BENJAMIN M	
			ART UNIT	PAPER NUMBER
			1723	
DATE MAILED: 08/24/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/527,617

Applicant(s)

HILDEBRANT ET AL.

Examiner

Benjamin Kurtz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/21/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Hopkins et al. US 1,049,715. Regarding claim 23, Hopkins teaches a plate for a filter press comprising: a rigid ring-like frame with a central recess extending therethrough, the frame including a shoulder disposed in the recess and heat transfer passages, a heat transfer assembly sized and shaped for mounting in the recess of the frame against the shoulder, the heat transfer assembly comprising a pair of thin metal heat transfer plates sidewardly spaced apart and rigidly joined at peripheral edges to define a hollow box, the interior of the heat transfer assembly defining a cavity (fig. 2 and 5).

Regarding claim 26, Hopkins teaches liquid permeable filter members (4) across the respective recesses of the frame to provide drainage chambers and drainage passages in the frame wherein the frame is free from a center divider wall (fig. 2 and 5).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckl US 6,387,282 in view of Hopkins (715). Regarding claims 1-3 and 11, Heckl (282) discloses a filter press with a first and second head assembly supported on a rail structure with the head assemblies being movable with a plurality of individual plates (1, 10) supported on the rail structure between the head assemblies extending horizontally and clamped between the head assemblies when the press is closed (fig. 1). The plates comprise a plurality of first plates (1) including a frame (3) with oppositely disposed faces, a peripheral portion, a central portion (2) recessed inwardly, a pair of liquid impermeable and flexible membranes (6) fixed to the frame (3) and extending across the opposite faces to define pressure chambers (6a) between the central portion (2) and the membranes (6), each of the first plates includes a pair of liquid permeable filter members (7) which overlie the respective membranes, each filter member and respective adjacent membrane together defining a drainage chamber therebetween (fig. 2, 3 and 5, col. 4, line 59-64). The plates comprise a plurality of second plates (10) including a frame with a pair of oppositely disposed faces, a peripheral portion (15), and a central portion, a pair of heat transfer members disposed within the central portion, the heat transfer members being disposed sidewardly inwardly to the peripheral portion (15) the central portion defining a chamber (14) to bring a heated fluid into contact with the inner surfaces of the heat transfer members (fig. 9, 11e, col. 5, lines 13-23, 53-62). The first (1) and second (10) plates are disposed alternating along the rail structure in adjacent sealing contact with each other (fig. 1) defining filter chambers (4) there between (fig. 2), each chamber being defined on one side by a membrane (6) of the first

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plate (1) and a heat transfer member of a second plate (10) (fig. 2), and the pressure chambers (6a) communicate with a fluid source to expand the membranes (6) (fig. 3, col. 4, lines 59-64). Heckl does not teach each second plate mounts a pair of liquid permeable filter members or a drainage chamber. Hopkins (715) teaches a filter plate comprising a pair of heat transfer members (2) with a pair of liquid permeable filter members (4) which overlie the respective heat transfer members, each filter member and adjacent heat transfer member together defining a drainage chamber therebetween (fig. 5, pg. 1, lines 74-81). It would have been obvious to one of ordinary skill in the art to use the filter member of Hopkins because the additional filter member will increase the effective filtration area without hindering heat transfer (pg. 2 lines 31-47).

Regarding claims 4-7 and 9-10, Heckl (282) in view of Hopkins (715) teaches each first and second plate define a passage therein in communication with the respective drainage chambers to permit drainage of the liquid portion of the slurry from opposite sides of the respective filter chambers; each heat transfer member defines therein a plurality of grooves which open toward the adjacent filter member to define a drainage surface across the heat transfer member (Hopkins fig. 2); the central portion of each second plate defines thereon a pair of oppositely facing side surfaces and said heat transfer members (2) being fixed to and overlying the oppositely facing side surfaces of the central portion of the second plate (Hopkins fig. 2 and 5); the central portion of the second plate (2) is hollow and each second plate comprises a heat transfer assembly (9) disposed within the central portion including the heat transfer members, the transfer members being sidewardly spaced from one another to define

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the chamber for receiving the heated fluid (Hopkins fig. 2 and 5); each first and second plate comprises porting therein including upper and lower ports diametrically opposite respective lower and upper ports of adjacent plates communicating with respective drainage chambers (Heckl fig. 1, Hopkins fig. 2); and the porting of the first and second plates additionally permits air blow through a filter cake disposed in the filter chamber.

Regarding claims 12 and 14, the frame of each second plate includes a central wall (9) having opposite sides on which the respective heat transmitting surfaces are defined, the central wall defining within the second plate heating passages (Hopkins fig. 2); and each second plate mounts thereon a pair of liquid permeable filter members (6) which overlie the respective heat transmitting surfaces, each second plate defining a drainage chamber between the filter member and the heat surface and defining drainage grooves opening toward the filter member (Hopkins fig. 2 and 5).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckl (282) in view of Hopkins (715) as applied to claim 1 above, and further in view of Klinkau US 4,832,840. Heckl (282) discloses the heat transfer elements (10) are constructed of metal (col. 5, lines 15-17) and the frame is constructed of a thermal insulating material (col. 5, lines 59-62) but does not disclose what that insulating material is. Klinkau (840) teaches making a frame from a plastic (col. 6, lines 63-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use plastic in the frame. By using plastic the frame can be produced by known proven welded structures (col. 7, lines 48-50).

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4. Claims 15-16 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juhasz (772) in view of Heckl (282). Regarding claims 15 and 20, Juhasz (772) discloses a plate (19) for a filter press comprising: a rigid frame (22) including a peripheral and central portion the central portion with a width less than the peripheral portion defining recesses (fig. 4), a pair of heat transfer elements (24) disposed on opposite sides of the frame (22) within the recesses with each heat element (24) comprising a peripheral portion fixed to the frame (22) defining bellows (52a) with a heat plate (24) fixed to the inner edge of the bellows extending across the recess, and each side of the central portion and the heat element (24) define a chamber providing heated fluid (fig. 4, col. 3, lines 30-36). Juhasz (772) teaches the heat element (24) imbedded with aluminum pigment but does not teach the element being metal. Heckl (282) teaches a heat plate (10) with a heat element composed of a metal, aluminum with a central opening extending therethrough (17) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the metal heat plate. The metal heat plate provides a high thermal conductivity (col. 5, lines 15-17).

Regarding claims 16 and 22, Juhasz further discloses the frame (19) defining a flow passage arrangement which communicates with filtrate chambers (42) at outward facing surfaces of the heat element (24) the flow passage arrangement communicates with a liquid discharge conduit (35) (fig. 3); and flexible bellows comprising flexible outer bellows joined to an outer edge of the heat plate and flexible inner bellows joined to an

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inner edge of the heat plate to support the heat plate on the central portion of the frame (fig. 4-6).

5. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopkins (715) in view of Heckl (282). Regarding claim 17, Hopkins teaches a plate (2) for a filter press comprising: a frame including an outer peripheral portion disposed in surrounding relation with a central portion, the central portion having oppositely facing sides which are recessed sidewardly inwardly relative to the peripheral portion, a pair of metal heat plates fixed to the sides of the central portion, the plates being disposed sidewardly inwardly relative to the peripheral portion to define part of a filtration chamber, the sides of the central portion define therein flow passages which receive heated fluid and transport the fluid into contact with the heat plates and a port arrangement which communicates with the respective filtration chambers (fig. 2 and 5). Hopkins does not teach the frame being constructed of a material having a low conductivity. Heckl teaches a frame (15) constructed of a material having a low heat conductivity (fig. 11e, col. 5, lines 59-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the frame of Heckl because the frame provides thermal insulation to avoid radiating heat to all surfaces not near filter cake (col. 4, lines 16-19).

Regarding claims 18-20, Hopkins further teaches the port arrangement permits air blow of cakes formed in the filtration chambers; each heat plate defines thereon an irregular surface that provides drainage for the liquid; and the irregular surface comprises a plurality of grooves opening toward the filtration chamber (fig. 2 and 5).



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6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hopkins (715) in view of Klinkau et al. US 4,832,840. Regarding claim 24, Hopkins teaches a plurality of flow diverting elements (9) joined to and extending transversely between the heat plates wherein the passages communicate with the flow diverting elements to provide intimate contact between heated fluid and an inner surface of each metal heat transfer plate (fig. 2). Hopkins does not teach a retaining strip. Klinkau teaches a retaining strip (28) secured to the frame to retain a heat transfer assembly (14) to the frame (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the retaining strip because the strip provides a spacing to adjust the filter chamber volume to the desired amount (col. 9, lines 49-56).

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hopkins (715) in view of Klinkau (840) as applied to claim 24 above, and further in view of Heckl (282). Hopkins in view of Klinkau teaches the filter plate but do not teach a heat insulating strip between the frame and the heat transfer assembly. Heckl teaches a heat insulating strip (15) between a frame and a heat transfer assembly (fig. 11e, col. 5, lines 59-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the insulating strip of Heckl because the strip provides thermal insulation to avoid radiating heat to all surfaces not near filter cake (col. 4, lines 16-19).

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-14 and 17-20 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1-2 and 17, Heckl in view of Hopkins teaches a second plate having metal heat transfer members that mounts thereon a pair of liquid permeable filter members; the heating plates having a drainage passage; and a port arrangement which communicates with the filtration chambers.

Regarding claim 11, Heckle in view of Hopkins teaches first and second plates where the first plates have liquid impermeable membranes and second plates provided with heat transmitting surfaces and liquid permeable membranes overlying the heat transmitting surfaces.

9. Applicant's arguments filed 7/21/06 have been fully considered but they are not persuasive. Regarding claim 15, Juhasz teaches the baffle structure attached to the edge of the heat transfer surface. The baffles of Juhasz, as shown in figures 4 and 5, expand and contract during operation while the rest of the heat transfer surface does not. Therefore, inserting the metal plate of Heckl would not destroy the expansion and squeeze function of the heat transfer surface. Juhasz shows only the baffle structure having the corrugated shape while the rest of the surface has separate corrugated structures attached thereto (fig. 4 and 5). Regarding claim 22, Juhasz teaches the inner edge of the heat transfer surface with an inner bellows as shown in figures 4-6, with the inner passage at 33 (fig. 6) and the same passage at figures 4 and 5).

10. The previous rejection of claim 8 under 35 U.S.C §112 has been withdrawn in view of the amended removal of the phrase "such as".

The previous rejection of claims 11-12, 14 and 17-18 on the grounds of non-statutory obviousness-type double patenting over claims 1, 2 and 5-8 of Higgins US

6,180,002 has been withdrawn in view of including the language of an impermeable membrane disposed in the first plates as taken from canceled claim 13 and included in claim 11 and including in claim 17 the limitation of metal heat plates.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bk 8/18/2006

  
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